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ABSTRACT

This experiment tested Piaget's hypothesis that peer interaction plays a crucial role in the reduction of childhood egocentrism. A sample of 46 second graders from a middle-class suburban public school were given a sociometric measure of popularity. Four tasks which assessed spatial, communicative, and role-taking egocentrism were then performed by each child. Intercorrelations among the four egocentrism tasks were computed by the Kendall Rank correlation method. Ablity on the spatial egocentrism task correlated with ability in role-taking. The peer popularity measure was not found to be related to any of the measures of egocentrism. It is suggested that the use of popularity as a measure of peer interaction may be a weak test of Piaget's hypothesis. (BRT)

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Egocentrism and Peer Interaction:

Testing Piaget's Hypothesis

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Egocentrism and Peer Interaction

Abstract

Piaget's hypothesis that peer interaction plays a crucial role in the reduction of childhood egocentrism was tested with a sample of 46 second-grade children. The results failed to support this hypothesis, a measure of peer interaction was not correlated with any of several measures of egocentrism (spatial egocentrism, communication egocentrism, or role-taking skill). Relations between spatial egocentrism, communication egocentrism, and role-taking skill were examined and it was concluded that egocentrism is not a unitary variable.

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Egocentrism and Peer Interaction:

Testing and Piaget's Hypothesis

Egocentrism, defined by Piaget (1962) as an individual's inability to coordinate two or more points of view has been operationalized in three broad forms. The first was communication egocentrism (Piaget, 1928) which refers to the young child's inability to take into account discrepancies between his own knowledge and the informational requirements of his listeners. Later, Piaget and Inhelder (1956) introduced the concept of spatial egocentrism, or the young child's inability to differentiate between his own perceptual view of a set of objects and the perceptual view of another person. Recently, investigators have focused on role-taking skill, the young child's developing ability to consider the viewpoint of another person (Flavell, Botkin, Fry, Wright, and Jarvis, 1968). Evidence concerning empirical relations among the various forms of egocentrism, however, is only beginning to accumulate (Cowan, 1971; Hollos and Cowan, 1973; Kingsley, 1971; Rubin, 1973; Cooper and Flavell, 1974) and it is uncertain to what extent egocentrism may be considered as a unitary variable.

Investigators, using a wide variety of measures, have documented age related developmental trends in each type of egocentrism (Shantz, 1975; Looft, 1972; Flavel et. al., 1968), but relatively few have focused on the mechanisms of this development. Piaget (1928, 1932) has suggested that one of the most important environmental factors leading to the decline of egocentrism is the interaction of a child with his peers. Some empirical support for this hypothesis comes from Hollos and Cowan (1973) who found that isolated rural Norwegian children achieved lower scores on a combined spatial egocentrism and role-taking measure than did comparable village and town children who had more opportunity for

social interaction. In a study more comparable to the present one, Rubin (1972) found a relation between sociometric popularity (an index of peer interaction) and communication ability in kindergarten and second grade children but not in fourth and sixth grade children. Deutsch (1974) found a relation between peer interaction and communication egocentrism in preschool children.

In the present study, correlations were obtained between spatial egocentrism, communication ability, and role taking skill in order to examine the hypothesis that there is a relation between the decline of egocentrism and participation in peer interaction. An additional purpose of the investigation was to test the extent to which the three types of egocentrism comprise a unitary variable.

Method

Subjects

Forty-six second grade white children, 20 boys and 26 girls, from two classrooms of a middle class surbruban public school were subjects. The mean age was 8.1 years with a range of 7.5 to 9 years.

Measures and Materials

Sociometric popularity. Popularity was used as a measure of peer interaction on the assumption that popular children engage in more peer interaction than do unpopular children. Each child was asked to name four classmates he would most like to sit next to in class, the four friends from class he would most like to invite to a party at his house, the four classmates he would most like to play with during recess, and his best friend in class. The popularity score represented the total number of times a child was named by any classmate for any of the four questions. The popularity scores ranged from 0 to 16 with a mean of 7.5.

Spatial egocentrism. A variation of Piaget and Inhelder's (1956) three mountains task was used in which children had to choose pictures representing different views of a three dimensional display while viewing the display from a fixed position (Cowan, 1971). The spatial egocentrism score represented the total number of pictures correctly selected and ranged from 0 to 5 with a mean of 1.91.

Communication egocentrism I. Cowan's (1971) task which measured child-to-child communication was modified to a child-to-experimenter communication measure for the present study. The child, seated back-to-back to the experimenter, was asked to take eight objects (one white and one black circle, one white and one black triangle, one white square, one ambiguous "bat" shape, and one white and one black ambiguous "moon" shape) and place them one by one anywhere he wished on a board marked off into 16 squares. The top half of the board was yellow while the bottom was red. After placing each object, the child was asked to describe both the object and its location to the experimenter. The child's instructions were tape recorded, transcribed, and coded for description and object placement. Both were scored 0 for none, 1 for use of a single dimension (e.g., "take the white one" or "put it in the bottom one"), 2 for ambiguous use of two dimensions (e.g., "put it in the red corner"), and 3 for unambiguous use of two dimensions. Scores for both object description and placement were summed over all eight objects and combined into a total score. Scores ranged from 8 to 44 with a mean of 30.3.

Communication egocentrism II. An adaptation of the Glucksberg and Krauss (1967) communication task was used. The child was seated back-to-back to the experimenter and asked to describe four of the Glucksberg and Krauss (1967) figures such that the experimenter would be able to

match up his cards with those of the child. The child was encouraged to tell all he could about the figures. When he stopped describing a figure he was asked whether he could say anything more about it as the experimenter was having a hard time picking it out. The child's statements were tape recorded, transcribed, and coded for number of distinctive features and for the child's response to the request for additional information. The communication egocentrism score was the sum of the mean number of distinctive features and the mean retell score. The scores ranged from 2.0 to 6.75 with a mean of 4.6.

Role-taking skill. The task materials, procedure, and coding were taken from Flavell et. al. (1968). The child was asked to provide a story to a sequence of seven cartoon drawings. Three pictures were then removed so that the sequence suggested a different story. The child was then asked to retell the story from the position of an imaginary bystander who had only seen the four drawing sequence. The category scores ranged from 1 to 4 (1 represented highest role-taking ability while 4 represented least) and had a mean of 2.5.

Procedure

All tests were administered by a white male experimenter. The popularity questionnaire was indivually administered in the rear of the classroom while other children worked on individual projects. The remaining measures were administered in two sessions in a school conference room. Session one lasted 30 minutes and consisted of the spatial egocentrism, role-taking and communication I tasks. Session two occurred about two weeks later and consisted only of the communication II measure; this session lasted about 15 minutes.

Results and Discussion

Intercorrelations among the four egocentrism tasks were computed by the Kendall rank correlation method. Only two were significant. Ability on the spatial egocentrism task correlated with ability in role-taking (τ = -.310, N = 46, $p < .002$). Interestingly, in three previous studies (Hollos and Cowan, 1973; Kingsley, 1971; Rubin, 1973) parallel results were found though several different measures of spatial egocentrism and role-taking were used. Thus the relation between spatial egocentrism and role-taking appears consistant even though correlations are modest.

A relation in the predicted direction between communication egocentrism II and role-taking ability, (τ = -.195, N = 46, $p < .025$) also was found. The pattern of results for communication egocentrism across several studies, however, has been mixed. Cowan (1971) and Hollos and Cowan (1973) found a relation between communication egocentrism I and spatial egocentrism. Rubin (1973) found a relation between communication egocentrism II and both spatial egocentrism and role-taking skill. Kingsley (1971) found mixed relationship trends among these variable. In the present study, a relation between the communication II task and role-taking was found, but no relation between the communication I and the communication II task, or any of these tasks and spatial egocentrism were found. Thus the degree to which all of these various tasks tap a common underlying social-cognitive capacity remains an open question.

The second issue of interest was the relationship between peer interaction and egocentrism. In the present study, the popularity measure was not correlated with any measure of egocentrism. This finding is, in part, consistent with Rubin (1973) in which he found no relation

between popularity and either spatial egocentrism or role-taking in grades k, 2, 4, or 6. The present study, however, did not replicate Rubin's (1972) finding of a positive relation between communication egocentrism and popularity in second graders, (communication II was a shortened version of Rubin's (1972) task). Thus when both studies are considered, there is no consistent support for the hypothesized relation between popularity and egocentrism.

In interpreting these findings it should be stressed that the use of popularity as a measure of peer interaction may be a weak test of Piaget's hypothesis. Ideally, in order to test Piaget's hypothesis, a complete history of the child's patterns of interaction (including target, quantity, and quality) should be specified. Clearly popularity does not tap all these aspects of peer interaction. The present findings as well as those of Rubin (1972) must be interpreted within these limitations.

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Footnotes

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